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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,867	03/12/2002	Maria Giuseppina Martini	IT 010006	2617

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EXAMINER

WAMSLEY, PATRICK G

ART UNIT	PAPER NUMBER
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2819

DATE MAILED: 04/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/070,867

Applicant(s)

MARTINI ET AL.

Examiner

Patrick G. Wamsley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. 03/16/2006.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Prosecution on the merits of this application is reopened in view of recent Office Actions in related applications 09/906,595 and 09/906,608.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 12 is rejected under 35 U.S.C. 101 as non-statutory. In 09/906,608, on April 8th, 2005, Examiner Tri Phan rejected claim 10, reciting a data stream, as non-statutory for claiming a signal per se. In this application, claim 12 recites a coded data stream. Thus, in accordance with the Office Action in 09/906,608, claim 12 is rejected as non-statutory for reciting a signal per se.

Moreover, there are four statutory classes for utility patents under U.S. law: methods, machines, articles of manufacture, and compositions of matter. An invention must fall into one of these classes to be patentable. A data stream clearly does not constitute either a method or machine. As something intangible, it cannot be classified as an article. Because a data stream is basically a form of energy, it cannot be defined as a composition of matter. Therefore, claim 12 is non-statutory.

In application 09/906,608, applicant, on July 20th, 2005, amended claim 10 to recite a system claim, thereby removing the need for a rejection under 35 U.S.C. 101. Applicant is advised to make a similar amendment in this application.

Claim 13 is rejected under 35 U.S.C. 101 as non-statutory. In 09/906,608, on April 8th, 2005, Examiner Tri Phan rejected claim 11, reciting a storage medium, as non-statutory for claiming non-functional material.

In this application, claim 13 recites a storage medium having an information field but does not recite any functional material. Thus, in accordance with the Office Action in 09/906,608, claim 13 is rejected as non-statutory for reciting non-functional data on a medium. Functionality is the basic determinant of the patent/copyright boundary. In this case, there is no suggestion that the data stream of claim 13 actually performs a function. Instead, it appears to be basically descriptive in function, equivalent to a motion picture recorded on a DVD.

In application 09/906,608, applicant, on July 20th, 2005, made claim 11 dependent upon claim 10, thereby removing the need for a rejection under 35 U.S.C. 101. Applicant is urged to amend the claims to include functional data, thereby ensuring that they include proper, patent-eligible subject matter. Also, it is unclear whether this invention involves the practical application of an abstract idea that produces a useful, concrete, and tangible result, the current standard used for evaluating patent eligibility for software. See <http://www.uspto.gov/web/offices/com/sol/notices/70fr75451.pdf>

Double Patenting

In 09/906,608, on April 8th, 2005, Examiner Tri H. Phan established double patenting rejections between that application, this application, and 09/906,595. Applicant filed a terminal disclaimer on July 20th, 2005 for 09/906,608. In addition, the claims in both 09/906,608 and 09/906,595 have been amended since April 8th 2005, significantly changing their scope. As a result, there currently is no need for a double patenting rejection in this application.

Drawings

In application 09/906,608, Examiner Tri Phan, on April 8th 2005, objected to the drawings, stating that they should be labeled with descriptive legends.

Applicant responded on July 20th, 2005, adding labels to Fig. 5. The drawings in this application also lack descriptive legends. Applicant should add labels to Figs. 4, 5, 7, and 8, helping a reader to better appreciate this invention.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities:

Page 1, line 8: Change "coding and" to -- encoding and --.

Page 2, line 9: Change "macro-blocks" to -- macroblocks --.

Page 4, line 11: Change "Length Codes" to -- Length Coding --.

Page 11, line 17: Change "Resync" to -- resync --.

Appropriate correction is required.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objection

Claim 13 is objected to because of the following informality:

Claim 13, line 3: Change "have been channel encoded" to -- channel encoded --.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Upon further review, the addition of a "single" length information field is now considered to be a question of written description rather than an issue related to enablement. Appellant first added the "single" limitation by amendment on 08/22/2003. While this addition was described as lacking support in the specification, it is more proper to define it as new matter. Careful review of the specification, as originally filed, demonstrates that this limitation was absent.

Here is a list of the sections of the specification describing length fields:

Page 2, line 15: "in the form of a length field."
Page 2, line 16: "length field may be added in each packet . . ."
Page 2, line 19: "chosen for the length field,"
Page 2, line 21: "the length field may comprise the lengths . . ."
Page 2, line 25: "the length field may contain the lengths . . ."
Page 3, lines 2-3: "the length field is deleted . . ."
Page 6, line 17: "a length field If added . . ."
Page 6, line 24: "including the length field will be:"
Page 7, line 17: "the length field comprises the lengths . . ."
Page 7, line 20: "the length field is deleted . . ."

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Page 8, line 10: "furnishes a length field If . . ."

Page 8, line 11: "includes the length field . . ."

Page 8, line 20: "The length field is detected . . ."

Page 12, line 25: "In the length field,"

Page 13, lines 4-5: "in a given length field,"

Page 13, line 8: "reserved in the length field . . ."

Page 13, line 12: "length field to indicate the length . . ."

A "single" length information field does not appear in any of these sections.

Instead, as depicted in Fig. 6, it is clear that a plurality of information fields [If] are present. Therefore, applicant's insertion of the "single" limitation by amendment, on August 22nd, 2003, constituted new matter. Applicant is advised to cancel the new matter and amend the claims to properly describe the invention as originally filed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the MPEG-4 Overview article by Koenen, hereafter Koenen, in view of U.S. Patent 3,996,558 to Heun, hereafter Heun.

For claim 1, Koenen discloses a method of encoding a data stream comprising the step of encoding partitions with different error protection rates [page 34, 2.5.8.3] for motion and texture data, using motion information to conceal loss of texture information. Claim 8 restates these method limitations in means plus function format.

Moreover, while Koenen describes the MPEG-4 Standard in general, applicant admits that this data format lends itself to using unequal error protection [page 1, lines 26-27].

Claim 10 presents the same encoder limitations in the context of a transmitter. As shown in Fig. 6 [page 14] of Koenen, MPEG-4 signal are used with both originating and target DMIF peers. In the context of a communication channel, the originating peer is a transmitter while the target peer is a receiver.

Claim 11 reverses the encoder limitations, describing a decoder in the context of a receiver, equivalent to Koenen's target device. Moreover, Koenen discloses a system decoder model [Fig. 7, page 17]. Claim 6 presents a decoding method while claim 9 restates these method limitations in means plus function format. Non-statutory claims 12 and 13 describe a coded data stream and a storage medium.

Unlike claims 1, 6, 8, 9, 10, 11, 12, and 13, Koenen lacks the "single length information field" limitation. In contrast, Heun clearly teaches this element in the context of data on magnetic tape. Heun's partition head [25] includes partition length data [col. 2, lines 42-43].

Heun's teachings are germane to the encoding process of the instant invention, because data structures can be recorded on many media, such as magnetic tapes, transmitted, received, and otherwise manipulated. Heun's partition gaps [col. 2, line 25], used to resynchronize the tape [col. 2, lines 25-26] are equivalent in function to Koenen's resynchronization markers [page 32, 2.5.8.1: Resynchronization]. Also, Heun clearly permits partition length to be varied [col. 2, lines 54-58], just as Koenen uses variable rate encoding to define video packets of variable length [page 33].

At the time of the invention, it would have been obvious to one of ordinary skill in the art to have applied Heun's teachings to Koenen. The motivation would have been to more easily detect errors for partitions of variable length, as suggested by Heun [col. 1, lines 43-53].

For claims 2 and 3, in the Koenen/Heun combination, the partition lengths would have been recorded before and after encoding, depending upon which coding technique was employed. Recording the lengths prior to encoding would have enabled a user to easily identify high motion areas [page 33], MPEG-4 sections having higher susceptibility to errors. Recording the lengths subsequent to encoding would have enabled a user to clearly identify separate video packets. Moreover, Koenen already provides a bit indicating the presence of additional resynchronization information [page 33], describing temporal increments. In the Koenen/Heun combination, post-encoding length measurement would help a user better detect timing errors.

For claim 4, Koenen discloses a resynchronization marker [page 32, last line]. In the Koenen / Heun combination, length information fields would have been inserted after Koenen's resynchronization markers, just as Heun places partition heads [25] after gaps [21] used for resynchronization.

For claim 5, Koenen provides markers for higher-robustness words [page 34: 2.5.8.3], related to the number of layers used for decoding and reconstruction.

For claim 7, Heun's partition length information would have been deleted after decoding, as it would have served its function. Retention of this field would have unnecessarily expanded the decompressed signal.

In the specification, applicant asserts that a fixed UEP scheme can be used. This also appear to be true in Koenen. On page 33, Koenen discloses the user of header information in a decoding process, including macroblock number, quantization parameter, and the header extension code [HEC]. In the Heun/Koenen combination, it's apparent that a length information field would fit easily into Koenen's header, as both Heun and Koenen achieve the object of measuring the length of partitions with variable number of data bits.

Examiner Tri Phan allowed related application 09/906,608 on November 10th, 2005. All allowed claims included the following limitation: " wherein the respective predetermined percentages are determined such that a first partition of the packet comprises at least a first original packet partition and the sum of the first partition of the packet and a second partition of the packet comprises at least the first original partition and a second original partition of the packet." As the current claims in this application are excessively broad, applicant is urged to narrow them. However, any amendment introducing new matter will be rejected under 35 U.S.C. 112, first paragraph, unless the new material is introduced in a continuation-in-part application.


Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,754,277 to Heinzelman et al provides greater error protection for motion data than for texture data [abstract, lines 2-4]. U.S. Patent 6,621,935 to Xin et al uses unequal error protection with an image distribution system.

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U.S. Patent 6,519,004 to Bahl uses unequal error protection [abstract, line 8] for segmented video data. U.S. Patent 6,405,338 to Sinha et al provides unequal error protection for audio encoders. U.S. Patent 6,301,558 to Isozaki provides unequal error protection for audio subbands. U.S. Patent 6,141,448 to Khansari et al encodes macroblocks with reference only to other macroblocks within the same GOB [abstract, lines 5-7]. U.S. Patent 5,886,652 to Adachi et al obtains a threshold from an average of bit lengths of variable length data blocks [abstract, lines 2-4].

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick G. Wamsley whose telephone number is (571) 272-1814. The official facsimile number is (571) 273-8300. An alternate facsimile number, (571) 273-1814, should only be used for unofficial documents.



Patrick G. Wamsley

March 6, 2006